REMARKS

In view of the amendment presented above and the Remarks submitted below, Applicants request reconsideration of the rejection of Claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, and 21-24 and the objections to Claims 7, 19, and 25-27.

Claim 28 has been allowed.

Claims 1, 4, 8, 13, 16, and 20 were previously canceled. Claims 2, 3, 5-7, 9-12, 14, 15, 17-19, and 21-28 remain in the application.

Objection to Claims 25 and 27

Claims 25 and 27 were objected to because of informalities due to typographical errors. The claims have been amended to correct the errors, and it is requested that the objection be withdrawn. These claims are now in form for allowance.

Rejection of Claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, and 21-24

Claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, and 21-24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,689,141 to Y. Kikkawa et al ("Kikkawa") in view of a paper entitled "Design, simulation create low surge, low cost gas-injection compressor" by A Zeckendorf et al, *Oil & Gas Journal*, Jan. 16, 1995 ("Zeckendorf").

Kikkawa discloses a compressor drive system for a natural gas liquefaction plant having gas turbine-driven refrigerant compressors wherein each gas turbine driver also drives an electric motor/generator. The motor/generator is used to provide startup torque for starting the gas turbine and for generating electric power when the gas turbine produces power in excess of that required to operate the compressors. The electric power is used elsewhere in the plant and/or to supplement a shortage of power in the other gas turbine. Kikkawa is silent on the use of recycle pressure relief valves or devices, recycle valves, and anti-surge valves.

Zeckendorf discloses gas compressor systems for the injection of surplus natural gas into underground reservoirs. Each system has anti-surge and recycle valves to improve the

compressor system operation, and the compressors are driven by gas turbines or electric motors. When required, the recycle and anti-surge valves return outlet gas from each compressor stage back to the inlet of the respective compressor stage via a suction drum. Protection against overpressure is provided by a high-integrity pressure protection system (hipps) instead of a large pressure relief valve connected to a flare system (see p. 58, 2nd column, and Figs. 3a, 3b, 3c, and 3d).

Each embodiment of the invention as claimed comprises a compressor system with gas turbine drivers wherein each compressor has one or more recycle pressure relief devices or valves that allow the recycling of at least a portion of the compressed gas from the compressor outlet to the compressor inlet via an optional vessel at the compressor inlet. Each recycle pressure relief device or valve opens when the compressor discharge reaches a designated pressure.

The claimed embodiments differ from Kikkawa because none of Kikkawa's compressors utilize recycle pressure relief devices or valves. In contrast, all of the claimed embodiments utilize one or more recycle pressure relief devices or valves. The problem of overpressuring the compressors or the system supplied by the compressor discharge is not addressed by Kikkawa.

The claimed embodiments differ from Zeckendorf because none of Zeckendorf's compressors utilize recycle pressure relief devices or valves. In contrast, all of the claimed embodiments utilize one or more recycle pressure relief devices or valves. Zeckendorf uses recycle valves to recycle a portion of the compressor discharge gas for cooling and return to the compressor inlet (see Figs. 3b and 3c and related text). Thus Zeckendorf's recycle valves are designed to be used when compressor cooling is necessary, and are not recycle pressure relief devicesm or valves as claimed in embodiments of the present invention. Zeckendorf also uses anti-surge valves to protect against compressor surges, wherein each anti-surge valve is located on a compressor discharge and when open recycles discharge gas to the compressor inlet. Thus Zeckendorf's anti-surge valves are designed to protect against compressor surge when necessary, and are not recycle pressure relief devices or valves as claimed.

In other versions of Zeckendorf's system (Figs. 3a and 3d and related text), the recycle and anti-surge functions are provided by the same valve. This common recycle and

anti-surge valve is not a recycle pressure relief device or valve as claimed in embodiments of the present invention.

Applicants' specification clearly differentiates between anti-surge valves and recycle pressure relief devices or valves. Fig. 1 and the specification in paragraphs [0038] and [0040] describe recycle pressure safety valves 102, 202, and 302 and anti-surge valves 114, 214, and 314. The recycle pressure safety valves 102, 202, and 302 are clearly distinct and different from anti-surge valves 114, 214, and 314. Fig. 2 and paragraph [0044] describe recycle pressure relief valves 122, 222, and 322 and anti-surge valves 114, 214, and 314. It is clear that the recycle pressure safety valves 122, 222, and 322 are distinct and different from anti-surge valves 114, 214, and 314.

Thus the claimed recycle pressure relief devices or valves are not anti-surge valves by definition according to the specification. Zeckendorf's recycle valves, anti-surge valves, and combination recycle/anti-surge valves are different from the recycle pressure relief devices or valves as claimed.

Because neither Kikkawa nor Zeckendorf disclose recycle pressure relief devices or valves, a person skilled in the compressor art would find no teaching therein regarding the use of recycle pressure relief devices or valves in gas turbine-driven compressor systems. In addition, the skilled person seeking information on the use of recycle pressure relief devices or valves in gas turbine-driven compressor systems would have no motivation to combine Kikkawa and Zeckendorf. Such a combination, even if made, clearly would disclose nothing about the use of recycle pressure relief devices or valves in gas turbine-driven compressor systems.

Zeckendorf is defective as a reference in judging the patentability of the claimed embodiments because Zeckendorf teaches away from the claimed use of recycle pressure relief devices or valves to protect aganst overpressure. Zeckendorf teaches that protection against overpressure is provided by a high-integrity pressure protection system (hipps) (see p. 58, 2nd column, and Figs. 3a, 3b, 3c, and 3d). This is contrary to the use of the claimed recycle pressure relief devices or valves.

It is respectfully submitted that the Examiner has improperly rejected Claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, and 21-24 and has not established that these claims are unpatentable under 35 C.F.R. 103(a) over Kikkawa in view of Zeckendorf. It is requested accordingly that the rejection be withdrawn.

Summary

In view of the amendment and remarks presented above, Applicants request that the Examiner withdraw the rejection of Claims 2, 3, 5, 6, 9-12, 14, 15, 17, 18, and 21-24 and the objections to Claims 7, 19, and 25-27. A timely Notice of Allowance for Claims 2, 3, 5-7, 9-12, 14, 15, 17-19, and 21-28 is requested.

Amendments to the Specification and Abstract will be made as needed when the final claims are allowed, so that the descriptive matter is in harmony with the claims as allowed (MPEP 1302.01).

The prior art made of record and not relied upon is acknowledged.

Respectfully submitted,

Willard Jones II
Attorney for Applicants
Registration No. 31,172
7201 Hamilton Boulevard
Allentown, PA 18195-1501

(610) 481-4587